Report SESE-LS 68-001

MICROFICHE/TELEX ORIENTED DOCUMENT SERVICES CENTER ESTABLISHED IN SYLVANIA LIBRARY THROUGH COOPERATIVE TEST PROGRAM WITH DEFENSE DOCUMENTATION CENTER

By

Dean K. Little

Revised

27 May 1968

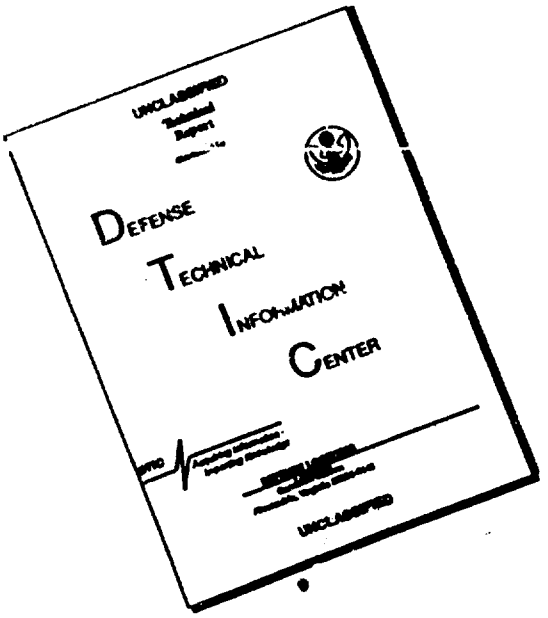
Sylvania Electronic Systems

An Operating Group of Sylvania Electric Products Inc.

100 First Avenue, Waltham, Massachusetts 02154

12

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

Talk presented to the Third Annual Northeastern Defense Documentation Center/Industry Users Conference, April 17, 1968 held in the Sylvania Electronic Systems Auditorium, Waltham, Massachusetts.

DOD Contractors, Military, and Government Agencies facilities located in the New England States and New York were notified and invited to send representatives to the Conference.

INTRODUCTION

When the Department of Defense decided to completely centralize the Defense Documentation Center Services, and closed the DDC Regional Field Offices September 16, 1966, many DOD contractors found themselves "Out of Fuel in the Niagara of Sci-Tech Information." The contractors quick access to documentation in the Regional Office locales was stretched from a few minutes to two weeks or longer.

Two years prior to the shutdown of the DDC Regional Offices, Sylvania undertook an extensive documents inventory/destruction program. The intent was to prepare for the advent of the Defense Contracts Administration Services Office, and tighter security regulations anticipated from the Project 60 study. The program relieved the pressure on space, and eliminated unused or rarely used documents. With the Regional Office close by we felt that quick access to most DDC documents, including the ones we destroyed, was no problem. Unfortunately we did not anticipate the "Nemesis of September 16th"!

In the following several months, while we debated the pros and cons of the alternatives open to us, we very unsuccessfully met our users usually urgent requirements for DDC documents. When we lost this service, which was better than any previous service, we were totally incapable of explaining the retrogression to our clientele.

PLANNING THE PROJECT

In March, 1967 we knew significant corrective action had to be taken quickly to better serve the document needs of our users. Also, we realized that it was vital for us to develop a quick reaction capability in three areas - 1) literature identification, 2) full text acquisition, and 3) copy reproduction or circulation.

Abstract Bibliography Requests (DDC Form 4) sent to DDC required a week to six weeks for replies. Although the results of Form 4 searches were very good, they did not meet the QRC requirements. The Western Union TELEX unit appeared to be the only practical means to get fast results on literature identification of reports in the DDC collection.

Having recently divested ourselves of thousands of hard copy documents to gain both space and control, we felt it was undesirable to re-order large quantities of replacement documents in hard copy form. The most obvious alternative for acquisition of full-text documents was DDC microfiche. Because of savings in space and efforts in physical handling, microfiche appeared to be a most attractive medium for the Library. Additionally, we recognized the opportunity microfiche afforded us in multiplying the document acquisitions rate by at least ten times (300 to 3000 reports per month) before exceeding our annual expansion rate for space. Having a greater collection in our Division's areas of interest would greatly enhance our "instant-document-access" capability following literature identification.

Reproduction of hard copy from microfiche or circulation of microfiche, we considered to be impractical and expensive from the standpoint of reproduction and manpower costs. Development of a master microfiche file from which diazo microfiche copies would be generated for users, we believed was the best choice for speed of handling, record keeping, and cost. Maintaining the master

file on a non-circulation basis insures that every user has ready access to the total in-house collection. Microfiche copies of documents identified in a literature search can be quickly scanned and screened for pertinent documents by the user while in the Library. "Non-return" diazo copies of the selected documents can be made quickly for the user on inexpensive equipment that is easily housed in the Library

EVENTS LEADING TO IMPLEMENTATION

On March 31, 1967 we approached the DDC Liaison Office indicating our intent to order all microfiche documents of interest to Sylvania beginning with August, 1965. They very graciously agreed to provide us in a six month period with approximately 70,000 unclassified, unlimited (U2) microfiche documents. Essentially this represented nearly all U2 documents put into the DDC microfiche collection between August, 1965 and June, 1967 (the agreed cutoff date). At this time, we asked for 30,000 DDC Form 1's, which were needed to order classified microfiche in the same period, and to order U2 and classified documents announced after June, 1967.

In reciprocation for DDC's marvelous support of our program I most willingly agreed to report the results of the project to the 1968 DDC/Users Conference. Those of you attending the conference today are "harvesting the fruits" of this cooperative venture. Hopefully, you will profit to your greatest satisfaction from your day in the field.

With the stage set for action on such a sizable project, I verbally outlined the plans for my immediate superior, the Chief Engineer, and followed-up with a detailed memorandum on April 21, 1967. He fully endorsed the program, which was to cost the Company $6,200.00, exclusive of manpower, to implement and operate the first year.

Final details were arranged during May and June with DDC to duplicate and ship the microfiche documents. The Western Union TELEX unit was ordered for installation by mid-June. The TELEX was put into immediate service for DDC computer searches, even though the microfiche was not in-house.

The large microfiche shipments began to arrive in late July. By the end of November, 1967 approximately 100,000 microfiche documents were accounted for by the Documents Librarian. These included - 70,000 documents Unclassified-Unlimited and Unclassified-Limited (DDC users and No Foreign Limitations) sent by special arrangements with DDC and 30,000 documents (U2, UL, and Classified) ordered on DDC Form 1's by the Documents Librarian.

On December 19, 1967 I sent a printed memorandum to about 1100 engineering and administrative employees of our Division announcing the fully operational DDC Documents Service Center. Essentially the memorandum described the formation of the center, the size of collection, the types of services, speed of service, and encouragement to utilize the Center for the fullest benefits.

EVALUATION OF PROGRAM

Before launching into the evaluation, I want to publicly thank Charles Thornhill, the Documents Librarian, and his staff for their supreme efforts in the implementation and operation of the Document Services Center. The compilation of data, which I will present shortly, Charles prepared for this report. He deserves my thanks for a job well done.

The data collected on the first eight months of the test program shows a significant part of the project's value to the users. The balance of the story can be told only by the users through the results they obtained with the service. Although such results are usually difficult to identify, I will discuss, later in the talk, some of the more pertinent statements the engineers made regarding the new service.

For the present let us focus our attention on the statistical evaluation of the DDC Microfiche/TELEX program. The data is listed separately for 1967 and 1968. The 1967 period covers July to December, when the implementation took place; and the 1968 period covers January 1st through April 10th, which represents the fully operational period.

In figure 1, the 127 TELEX searches were requested by 57 individuals, which averages 2.4 searches per requestor.

In item 3 of figure 1, 6035 AD documents were cited in the 137 searches. Of these 4722 AD documents were available in the 100,000 microfiche document collection, or 78%. The remaining 22% (1313 documents) represent a combination of DDC documents not available in microfiche (AD nos. older than 1965) and limited documents.

In figure 2 the data shows that 34% of the TELEX searches covered periods back to five years (1962 – 1967); 49% fell within the three to five year period; 23% – back to 10 years; 24% – beyond 10 years. It is interesting to note that in 48% of the searches, material 10 years or older was requested – this we did not expect. Previously without the benefit of a study program, we assumed 80% to 90% of the material requested on searches fell into the one to five year period.

		1967	1968	TOTAL
1.	Number of TELEX Searches Transmitted to DDC	88	49	137
2.	Number of Individuals Requesting TELEX Searches	34	23	57
3.	Number of AD Reports:			
	A. Referenced in TELEX Replies	4286	1749	6035
	B. Found in Microfiche Collection	3318	1404	4722
	C. Not Found in Microfiche Collection	968	345	1313

Figure 1 TELEX Searches, Microfiche AD Reports, and Individuals Making Requests.

	Number of TELEX Searches		
Range in Years	1967	1968	TOTAL
2	1	0	1
3	18	2	20
5	35	12	47
7	0	3	3
10	21	11	32
Complete DDC Collection	13	21	34
Total Number of Searches	88	49	137

Figure 2 Time Periods Covered by TELEX Searches

The number of working days between the initial TELEX transmission and the reply from DDC is depicted in figure 3, which shows that 61% of the searches are received within 24 hours, and 84% within 48 hours. The quick turn around on these searches from DDC is of tremendous value to us.

The number of microfiche viewed and duplicated for engineers is shown in figure 4. Only 363 documents were viewed and 126 duplicated for retention. Of 6035 documents cited in the searches and 4722 AD documents available, the viewing of 363 documents appears to be very small. I hasten to add that this is explained by the random selection technique from the AD numbers listed on the TELEX replies. Consequently, not all documents listed are viewed in every case.

For those of you interested in microfiche file maintenance, figure 5 shows the time (in minutes) required to retrieve AD reports cited on the TELEX message, and to refile the microfiche for 1000 documents. The test check revealed that identification and retrieval required 0.4 minute, and refiling required 0.25 minute. Although we did not run a comparative test with full size documents, we are certain the amount of handling time would be significantly greater.

	Number of TELEX Searches			
Number of Days	1967	1968	Total	Percentage
1	52	32	84	61.3%
2	22	9	31	22.6%
3	13	3	16	11.7%
4	1	0	1	0.7%
6	0	5	5	3.7%
Total Searches	88	49	137	100.0%

Figure 3 Number of Working Days Between Initial TELEX Transmission and Reply from DDC

Number of Microfiche	Cited	Available In-House	Viewed by Engineers	Duplicated for Engineers
1967 (88 searches)	4286	3318	240	80
1968 (49 searches)	1749	1404	123	46
Totals	6035	4722	363	126

Figure 4 – Microfiche Viewed and Duplicated

	1000 Documents	Average Time Per Document
Time Required (minutes):		
A. To check holdings and pull microfiche	400	0.4
B. To refile microfiche	250	0.25

Figure 5 – Time Required to Retrieve TELEX Cited AD's And Re-File Microfiche – 1000 Documents Sample

Users Acceptance of TELEX/Microfiche System

The users of the DDC Document Services Center are very pleased with the greatly improved services of the TELEX/Microfiche system. The quick reaction capability in obtaining searches and having instant access to the full-text microfiche documents is to the users the greatest benefit of the Center. In direct association the QRC for second and third level TELEX Searches significantly speeds-up the document weeding process for the users.

One user stated that the above mentioned service was at least 300% better than our best provided service, which provided identification and aquisition of documents in two to eight weeks. Also he stated that under the earlier system the documentation was received usually long after the need for it expired.

Although hard copy documents are preferred, the users indicate their willingness to use microfiche, primarily because microfiche is available on a moment's notice. In other words, if the information is available when it is needed, they will gladly accept it in any form – in this system the readily available form is microfiche.

There are no users, at least that we have interviewed, who really prefer microfiche over hard copy for reading purposes – that is, reading complete documents. However, the majority of the users welcome microfiche, when quickly provided as I mentioned earlier. They most frequently scan the microfiche on viewers selecting or noting contents pages, abstracts, graphs, or text of specified interests. In many instances the users make copies of the selected pages on our Recordak Magnaprint Reader/Printer. When the engineers require a complete hard copy reproduction, we request one from DDC on their familiar Form 1 tab card. Once the most pertinent documents are located the users usually request a microfiche duplicate for their files. These we make for them on the Atlantic A-9 vacuum frame and D-22 developing unit.

Some of the engineers or their clerical assistants have devoted time to xeroxing the TAB abstracts of TELEX cited documents, and assembled them as bibliographies. Several of these bibliographies have been utilized by other engineers on other projects.

Application For Selective Dissemination of Information (SDI)

Along with five of the 40 organizations in the DDC Automatic Services and Products (ASP) Test Program, we are obtaining DDC computer tapes. These tapes contain the AD references and abstracts from portions of the DDC TAB, which we are planning to put into the Sylvania Selective Dissemination of Information (SDI) Program. Abstract notice cards from our first SDI run under the ASP Program will be sent to our SDI participants within the next two weeks. We will continue utilizing DDC tapes in our Program, if DDC implements their ASP Program for all DDC registered contractors, as previously planned. With this program the SDI users will have bibliographic card files at their finger tips, and can have by request from the Library the related microfiche documents. Therefore xeroxing the TAB abstracts as described before, would be unnecessary in most instances for the users to make up bibliographies of custom interest.

Users of Technical Information

Announcement of the DDC Services Center to 1100 engineering and administrative personnel helped to bring a few more users into the Library, but not nearly the number we hoped for. The reason for this occurrence is evidenced in numerous surveys of engineers, scientists, and other users of technical information services in both industry and government.

Dr. Thomas J. Allen, M.I.T. Sloan School of Management, in a recent address stated that a majority of the engineers, when starting a project first seek information from their colleagues, 63% of which are employees of other companies (1/). Other surveys show that scientists make substantially more use of outside sources than do engineers (2/). Secondly the engineers talk to their colleagues within the company, and then possibly will seek assistance from the Company Library or Information Center.

Dr. Allen referred to the more frequent users of technical information as "technological gatekeepers" – men usually having longer tenure with the company, often holding technical staff positions, and usually are the ones consulted by others for technical discussion and information (3/). These "gatekeepers" are reported in the surveys as having the greater amount of contact with the professional and scientific literature, hence more frequent users of the Library. Further, Dr. Allen stated that their surveys support the conclusions of the DOD Users Studies, which previously revealed the majority of the engineers and scientists do not use the Libraries. Many users are not aware of the numerous central information sources such as DDC, NASA, Information Analysis

Centers, etc. (4/). However, he stated in his address to the librarians and management representatives that the library information, being utilized by the "technological gatekeeper", was indeed being disseminated to a majority of the firm's potential library user population. Dr. Allen indicated that librarians should continue to develop and promote more and better library services at every opportunity. Such activity will help to compensate for attrition of "technological gatekeepers" as well as other users.

Basically the best advertisement for the library is the in-person verbal contact with users and non-users alike. Follow-up with good performance after such contact will often win converts from the non-users, or encourage users to be more active. In the implementation of our DDC Services Center our in-person discussions with potential users produced results that proved the corollary. The number of respondents, however, was less than a majority of those addressed in-person. Also as anticipated, our satisfied users were responsible for some new users approaching the Center for service.

CONCLUSIONS

The amount of data, collected in less than four months for the fully operational DDC Services Center, is insufficient enough to be conclusive in several aspects. A larger volume of data is necessary to determine more realistic results.

As more users become accustomed to the use of microfiche, more convenient viewing stations are set up, and better viewing equipments are obtained, we expect to experience increased activity at the Center. When the Company's SDI Test Program, which utilizes "DDC/ASP Computer tapes", becomes fully operational, we expect to see another decided increase in microfiche document requests.

Our intent is to collect data on the activity of the Center for the balance of 1968, and compile a report on the twelve months period. If the analysis of the information reveals any significant changes or unexpected results from that reported herein, and appears to have value for the Sci-Tech Community, we will make a concerted effort to publish it.

REFERENCES

1. Allen, Thomas J., "Studies On The Flow of Technological Information", talk presented to Boston Chapter of Special Libraries Association, at Sloan School of Management, M.I.T., Cambridge, Massachusetts, April 1, 1968.

2. Wooster, Harold, "Policy Planning For Technical Information in Industry" Air Force Office of Scientific Research, Arlington, Virginia, November 29, 1967, AFOSR 67-2588, AD661 589.

3. Allen, Thomas J., and Cohen, Stephen I., "Information Flow In An R&D Laboratory", Sloan School of Management, M.I.T., Cambridge, Massachusetts, August, 1966, Working Paper 217-66.

4. Goodman, Arnold F., Hodges, John D., Jr., et al, "Final Report DOD User-Needs Study, Phase II, Flow of Scientific and Technical Information Within The Defense Industry", Volume II, North American Aviation Autonetics Division, Anaheim, California, November 30, 1966. AD 647-112.

Unclassified

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and index of annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) Sylvania Electronic Systems - Eastern Division Sylvania Electric Products Inc. Waltham, Massachusetts 02154	2a. REPORT SECURITY CLASSIFICATION Unclassified 2b. GROUP

3. REPORT TITLE

MICROFICHE/TELEX ORIENTED DOCUMENT SERVICES CENTER ESTABLISHED IN SYLVANIA LIBRARY THROUGH COOPERATIVE TEST PROGRAM WITH DEFENSE DOCUMENTATION CENTER.

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)
Scientific Interim

5. AUTHOR(S) (First name, middle initial, last name)
Dean K. Little

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
(17 April 1968) Revised 27 May, 1968	8	4

8a. CONTRACT OR GRANT NO	9a. ORIGINATOR'S REPORT NUMBER(S)
In-House b. PROJECT NO	SESE-LS-68-001 9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT
Distribution of this document is unlimited

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
PROCEEDINGS. Presented at Third Annual Northeastern Defense Documentation Center/ Industry Users Conference, Waltham, Massachusetts, April 17, 1968	

13. ABSTRACT

In cooperative program with Defense Documentation Center Headquarters, Sylvania arranged, between March 31 and June 20, 1967 for procurement of 70,000 unclassified - unlimited documents without DDC Form 1 cards, and 30,000 unclassified - limited and classified documents with Form 1's. The huge effort was mounted to overcome effects of an in-house documents inventory/selective destruction program, and the DDC decision to close their Regional Field Service Offices. Sylvania and other DOD contractors found themselves "Out of Fuel in the Niagara of Sci-Tech Information" - quick access to contract documentation in the DDC Regional Office locales was stretched from minutes to over two weeks.

Western Union TELEX (with tape transmission) was installed, June 1967, for transmitting Rapid Response Bibliography (RRB) search requests to DDC for overnight computer searches. TELEX Search mode in conjunction with in-house collection of microfiche documents and microfiche duplicating equipments, provided library with quick reaction capability in (1) literature identification (2) full text acquisition, and (3) copy reproduction of no-return copies of master file microfiche. Statistics recorded on number of TELEX searches, requestors, documents cited and available in-house, microfiche viewed and duplicated for users, TELEX response time, filing information, etc.

Users preferred hard copy, but expressed willingness to use microfiche supplied on quick reaction basis. Users especially pleased with services of Library's TELEX/ Microfiche System, because it located most information and documents before need expired.

DD FORM 1473

UNCLASSIFIED
Security Classification

KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Microfiche						
User Surveys						
Rapid Response Bibliography						
Documentation						
Literature Searching						
TELEX Application						
Microfiche Duplication						
Information Storage and Retrieval						
Information Service						